Diving Safety Lines

Spring 2015 Edition

Diving Safety Lines is a semi- annual release by the Afloat Safety Directorate of the Naval Safety Center. The information contained herein is a summary of research from selected reports of diving hazards to assist you in your mishap prevention program. ***Diving Safety Lines*** is intended to give advance coverage of safety-related information while reducing individual reading time. This bulletin does not, in itself, constitute authority but will cite authoritative references when available. It is recommended that this bulletin be made available to all hands.

From the Diving Safety Division Head

CWO3 William "Toby" Turner

Hello everyone. My name is CWO3 William "Toby" Turner and I reported aboard in October 2014 after completing a very rewarding tour at Naval Special Warfare Group THREE Det Little Creek. Since reporting I have had the chance to get out to a few dive lockers and submarines and get up to speed with the business of conducting diving safety assessments. My initial thoughts are that this is a pretty good job; I get to travel quite a bit and visit Navy, Marine Corps, Air Force, Army and Coast Guard dive lockers all over the world. How cool is that? Many of you may have heard that the Naval Safety Center has begun the process of generating the requirements for the "next version" of the Dive Jump Reporting System (DJRS) and I can't thank you (the fleet) enough for the input that you provided to eliminate many of the problems that existed in DJRS as well as many "nice to have" suggestions for the new system. At this time, we are planning for the new system to be a one stop shop for reporting dives and dive mishaps, unlike the current process of reporting dives in DJRS and mishaps in WESS. I'm looking forward to seeing you during our assessments and if there is anything I can do to help anyone, please give me a call or shoot me an email.

Diving Safety Lines
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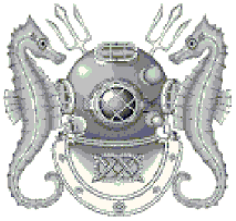


Master Diver's Corner

NDCM (MDV/DSW/EXW/SW) David "Shep" Schoephoerster

So, sometimes I wonder why we at the Naval Safety Center even write these articles. I look back at the last one I wrote and articles from years past that have been published, and we continue to do the same thing again and again. Two things that I spoke of last time are still our top hits on our Diving Safety Assessments (DSA); yes the name has changed from survey to assessments.

I am still finding expired meds in medical kits during assessments. This is after it has been inspected, why is this; if something is expired it's expired unless you show me or one of the other team members that the shelf life has been extended. To me it just shows that we still have personnel signing off on things that don't really care. I will open every one of your kits and go through them so get them right.

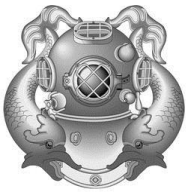
Training, once again we have great training plans and are following them, but what we don't do is track or follow-up as to who missed the initial training. It's up to you to figure out how you want to track the personnel that have missed the training. You can use the bottom of training sheet or a new sheet, what I want to know is how they received the training, i.e. power point, facilitator or have read the handout.

Problems in the planned maintenance system are like dominoes. Once we spot something, for example situational requirements not recorded, we start looking deeper at other areas of your maintenance program. If you are having problems with PMS, ask for help. Work center supervisors look at you MIP's and MRC's and make sure they're applicable for the equipment you have, same thing goes for looking around your locker and realizing what equipment does not have coverage.

We need feedback from you. What would you like to see changed in our assessments? Are we performing the assessments to your satisfaction? What else can we do at the Naval Safety Center to help you out?

I look forward to seeing you at the upcoming Military Divers Training Continuum (MDTC) in Panama City. Be sure to get your concerns to your SEAT representative, we are meeting prior to the MDTC.

HOOYAH



Diving Compressors and Logs

NDC (DSW/SW) Fred Taylor

During Diving Safety Assessments (DSA), we see an assortment of compressor make and models in various configurations and sizes. The check list for air & stowage is rather straight forward and we usually cross check the PMS boards for any associated maintenance with Objective Quality Evidence (OQE) such as air sample logs, relief valves/gauge logs. The PMS coverage for all compressors is relatively standardized across the board when it comes down to compressor, drive unit and filter system maintenance. Another item which should be common to all compressors is the operational hour meter/log book.

The compressor log can be a very useful tool when it comes down to tracking situational requirements or 'R-Checks' and checks with dual-periodicity codes. When used properly, the compressor log can provide operators with a history of accomplished maintenance, upcoming checks, and parts ordering. The contents of a compressor log can be tailored by commands as needed but the required entries are frequently covered on a PMS card under the NOTES/PROCEDURE section.

Trends we are seeing these days include missing or damaged log books or logs with little or no pertinent tracking information; run time in hours and systems being charged. Also, maintenance performed is another entry which is often overlooked. We frequently conduct 'On the spot Training' with work center supervisors and maintenance personnel and go through the compressor MIP and highlight how to track maintenance concurrent with the running hours.

The following are typical compressor log book entries and how they relate to maintenance checks and PMS boards:

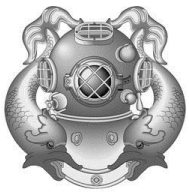
-DATE:
-INITIALS:
-OIL LEVELS:
-START/STOP TIME:
-TOTAL HOURS:
-SYSTEMS/CYLINDER JAMMED:

When PMS checks with dual-periodicity codes are completed they should be written in the log book across the columns. The advantage here is the entry acts as a place holder and creates a new starting reference point for that check. An example would be if the TOTAL HOURS were at 213 when changing the engine oil/lube oil filter, which is an A-1R on MIP 5921/035, then the check would be redone in 200 +/- 20 hours of operation or after 413 hours; or within a year for the annual portion of the check. Usually maintenance personnel claim they never get close to the hourly section of the dual check. But, if you are not tracking these checks properly, you are at best guessing. An example which proves this point better is the 18M-4R for the BAUER P1 filter cartridge when used on a seven standard cubic foot/minute (SCFM) Bauer

portable compressor. The cartridge is good for 35 hours of operation which may easily happen before the 18 month portion of that check.

Where did the *air* go? ***SYSTEMS/CYLINDER JAMMED*** is probably the most important item to reference when contaminated air is suspected. If you don't know which *air bank* or *SCUBA* cylinders were jammed when bad air is suspected, then everything **MUST** be considered contaminated and tagged out.

Use your compressors operational hour meter/log book to your advantage and accurately track your maintenance with it. Stay ahead of maintenance and watch those dual-periodicity checks. Remember the role a compressor plays in any system and realize its importance in delivering quality air to its end users; it's called a divers life support system for good reason!



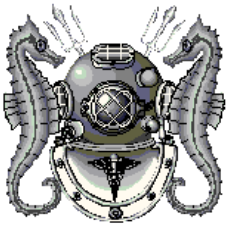
Managing WESS/DJRS Account Suspension

NDC (DSW/EXW/SW/FPJ) Joshua D. Benjamins

The Department of Defense has a growing need for higher security standards throughout the entire Navy. We also have people leaving the military and leaving Web-Enabled Safety System (WESS) accounts open and unused.

The WESS program has derived a plan to eliminate the open ended accounts and raise security parameters by deactivating all accounts that are inactive for 30 days. Then followed by a 90 day window of non-reactivation requirement, the WESS accounts will be completely wiped out. To eliminate this from happening, you must enter into your WESS account within every 30 days. If you find yourself inactive for 30 days and want to have your account unsuspended, you will have to call the **WESS Help Desk** @ (757) 444-7103 Ext. 7048.

Let them know you are locked out of your **WESS** account; you technically are not locked out of your Dive Jump Reporting System (DJRS) account. Imagine WESS as a huge building you got locked out of. DJRS is a room inside this building with no direct access. The sooner you get your access into WESS, the sooner you can be utilizing DJRS. Remember, WESS Help Desk has the master key, give them a call.



Computer Issues and Data Requests

HMC (DSW) Chris Precht

Due to a recent network push of Internet Explorer Version 10 (IE 10), we are receiving a large volume of calls from people not being able to access DJRS or WESS. This is due to a compatibility issue with our systems and IE 10. Below are the links to complete the process.

1. http://www.public.navy.mil/navsafecen/Pages/wess/WESS.aspx

2. Under, Users' Guides, Training and FAQs (middle of the page) click on How to modify IE compatibility View.

3. Complete all of the steps in the Word document.

4. Restart your computer.

This must be completed for each user on the computer that is being accessed.

We have also been receiving calls for people asking for statistics about dive rigs, profiles, bottom time, etc. Follow the below process to request any information that we maintain in the systems.

1. http://www.public.navy.mil/comnavsafecen/Pages/index.aspx

2. On the right side of the page click the grey bar that says statistics.

3. On the left side of the page click 5102 Data Request Form.

4. In the narrative block be as specific as possible with what statistics you are looking for.

5. Click "Submit Request to NSC"

Dive Mishap and Near Miss Reporting

CWO3 William "Toby" Turner

At the time of writing, we are nearing our final week of development for the Dive Mishap/Hazard "bolt-on" for Webb Enabled Safety System (WESS). Some of you may have seen the tutorials I've sent out so this may be old news for you, but our goal with the new system was to streamline the process and make the system more intuitive for the end user. So far the limited feedback we have received has been favorable so that is a good sign.

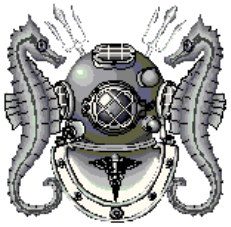
I've heard some grumbling from around the fleet about the hazard reporting guidance that was released earlier by NAVSEA in AIG 14-19 and I know everyone has read it and implemented the required changes into your dive manuals but there is a key statement that I feel needs reiterating. **"Units shall investigate and submit a HAZREP on hazards and near-mishaps that do not warrant submission of a safety investigation report (sirep). Self-evaluation and self-reporting of near mishaps is a key measure of professionalism and demonstrates *concern for the greater diving community.*"** I understand the administrative burdens all commands face. I've been there, done that, and realize how painful it can be; but if your HAZREP submission can prevent a future mishap, isn't it worth it? So, whether you feel the ship or submarine should be reporting it, the crane crew should be reporting it, or that it should not be reported at all, think about this for a second; a fellow deep sea diver's life may be spared or serious injury averted due to your :30 minutes of administrative reporting.

We have created a diving community of interest (COI) in WESS so be sure to select it when entering dive mishaps or hazards, this will ensure that all persons with notification permissions (in WESS) throughout the diving community will be notified via email once the submission has made it through our reporting and quality assurance process here at the Naval Safety Center. Below are links to tutorials of how to use and navigate through the new system. We are standing by to help out in any way we can, so please don't hesitate to call or email us.

http://www.public.navy.mil/comnavsafecen/Documents/WESS/WESS_Homepage.ppsx

http://www.public.navy.mil/comnavsafecen/Documents/WESS/SPARC_Mishap-Hazard_Workspace.ppsx

http://www.public.navy.mil/comnavsafecen/Documents/WESS/Shore-Ground_UG.ppsx



Dehydration and Decompression Sickness

HMC (DSW) Dean Del Favero

In diving, high levels of nitrogen are absorbed when a person is exposed to increased pressure. If this excess nitrogen is not metabolized naturally as a diver ascends, it forms bubbles that can lodge in various parts of a diver's body. The term *decompression sickness (DCS)* describes any one of a variety of ailments caused by absorbed nitrogen coming out of solution in a person's body.

Every diver has a different level of DCS risk. Many risk factors are still not fully understood, but there are a few basic factors that experts agree increase the chance of developing DCS. Common risk factors are high body fat levels, exercising too soon before and after diving, poor fitness level of the diver, older age, illness or injury, alcohol consumption before or after diving, diving in cold water, increased blood carbon dioxide (CO2) levels, and dehydration.

Dehydration causes less blood to be available for gas exchange which makes it more difficult for the body to off-gas. With the warmer season fast approaching, we need to be mindful of our hydration levels and how being dehydrated adversely affects our risk of decompression sickness.

In an effort to demonstrate the increased risk of DCS due to dehydration, the Naval Medical Research Center performed a study on 57 male pigs. The pigs were divided into two groups: 31 hydrated and 26 dehydrated pigs. They were compressed on air to 110 fsw for 22 hours and brought directly to the surface at a rate of 30 fpm. In the hydrated group, 10 out of 31 developed DCS and 4 died. In the dehydrated group, 19 out of 26 developed DCS and 9 died. Dehydration significantly increased the overall risk of severe DCS and death.

The key to avoiding dehydration and reducing your chances of DCS is prevention. A few key ways to prevent dehydration include drinking plenty of clear liquids, avoid diuretics like alcohol and caffeine products, consume a healthy vitamin and mineral rich diet, avoid over-exertion, and avoid too much sun exposure. If unsure of your hydration status, check your urine. The color should be light yellow to clear and odor free. If it is dark in color and smells strong, chances are you are dehydrated. Most importantly, use common sense!

Sources:

http://www.ncbi.nlm.nih.gov/pubmed/16491576

http://scuba.about.com/od/divemedicinesafety/p/Skin-Bends-A-Frequently-Overlooked-Form-Of-Decompression-Sickness-In-Divers.htm

http://scuba.about.com/od/divemedicinesafety/a/dcs_2.htm

Top 10 Navy Commands

(By Total Bottom Time and Dives Conducted)

March 2014-March 2015

TBT in minutes	Total Dives	UIC	Command Name
604,760	11,890	N0610A	NAVDIVESALVTRACEN PANAMA CITY, FL
348,987	6,931	N49746	NSW BASIC TRNG COMMAND
271,747	3,088	N32253	PEARL HARBOR NAVSHIPYD AND IMF
245,283	2,718	N4523A	PUGET SOUND NAVAL SHIPYARD
214,850	2,860	N55236	SOUTHWEST RMC SAN DIEGO, CA
183,572	1,984	N41150	NORFOLK NAVAL SHIPYARD AND IMF
172,713	2,537	N08973	SDV TEAM 1
163,649	1,702	N34123	TRADET 3
144,702	4,732	N47898	NSW DEVELOPMENT GROUP
141,066	848	N68316	NAVSUBSUPPFAC NEW LONDON, CT

Top 5 Marine Corps Commands

(By Total Bottom Time and Dives Conducted)

March 2014-March 2015

TBT in minutes	Total Dives	UIC	Command Name
413,824	5,076	M06050	MC DIVE SCHOOL (NDSTC)
33,418	1,490	M11009	1ST RECON BN, 1ST MARDIV
24,700	1,125	M20905	MARINE SPECIAL OPERATIONS ADVISORY
20,622	742	M08321	2ND RECON BN, 2ND MARDIV
20,173	614	M20920	1ST MSOB

Top 5 Air Force Commands

(By Total Bottom Time and Dives Conducted)

March 2014-March 2015

TBT in minutes	Total Dives	UIC	Command Name
223,453	3,328	FFGS70	AF COMBAT DIVE SCHOOL (NDSTC)
10,470	235	FFFQBF	21ST SPECIAL TACTICS SQUADRON
10,399	208	FFF3M0	SPECIAL TACTICS TRAINING SQUADRN
9,973	526	FFF3N6	24TH SPECIAL TACTICS SQUADRON
7,389	118	FF3Y50	66TH TRAINING SQUADRON

Top 5 Army Commands

(By Total Bottom Time and Dives Conducted)

March 2014-March 2015

TBT in minutes	Total Dives	UIC	Command Name
207,985	4,627	W1E0C0	SPECIAL FORCES UNDERWATER OPS SCHOOL
49,168	1,041	W4K724	US ARMY ENG DIVE SCHOOL (A/169)
34,505	875	WDSNAO	7TH SPECIAL FORCES GROUP
33,107	1,133	WH08AA	10TH SPECIAL FORCES GROUP
22,356	397	WDZ1AA	74TH ENGR DET (DIVE)

Top 5 Coast Guard Commands

(By Total Bottom Time and Dives Conducted)

March 2014-March 2015

TBT in minutes	Total Dives	UIC	Command Name
15,705	196	G70400	AVIATION TECHNICAL TRAINING CENTER
13,507	408	G34273	REGIONAL DIVE LOCKER EAST
12,589	511	G32426	REGIONAL DIVE LOCKER WEST
5,216	258	G15255	USCGC SEQUOIA
3,779	205	G15245	USCGC WALNUT

Top 25 Divers By Bottom Time

March 2014-March 2015

Number of Dives	Name	TBT min	UICs
140	Corriell, Joshua	13211	N68438 N52861 N41150 N4523A N49769
124	Baker, Christopher	12050	N68438 N0610A N45255 N30631 N41150 M67360
58	Mostek, James	10514	N0610A N68316
68	Miranda, Antonio	9980	N39564 N39590 N08973 N34123 N39588
97	Schouweiler, Grant	9787	N0610A N32253
51	Martinez, David	9715	N00750 N0610A N34123 N68316 N41150
98	Miller, Matthew	9451	N0610A N45255 N4523A
61	Donnelly, Chance	9379	N0610A N08973 N42270 N55236 N08842
48	Stuart, Christian	9220	N0610A N00750 N68316
44	Longfellow, David	9191	N0610A N68316 N30631 N66596
64	Ricker, Jefferey	9119	N39564 N46462 N34123 N08973 N49746
53	Frank, Lyle	9093	N0610A N55236
54	Clark, Erik	8942	N0610A N45255 N30631
76	Gazda, Gerald	8661	N42838 N43505 N0610A N0464A N39679 N41150
42	Bollinger, Zachary	8546	N0610A N00750 N68316
63	Mccrackin, Jamison	8290	N0610A N55236 N61755 M67360 N49746
60	Myers, Jason	8052	N45254 N0610A N08973 N55236 N08842 N49746
69	Kumm, Adam	8049	N0610A N62758 N32253
59	Caruana, Scott	8001	N0610A N00750 N55236
46	Stuller, Alec	7880	N0610A N68316
146	Sato, Sanford	7764	N62758 N32253
65	Li, Thomas	7714	N39564 N34123 N08973 N39586 N49746
58	Mcmenamin, Brian	7711	N39564 N08973 N34123 N49746
60	Lascelles, Jonathan	7609	N39564 N46462 N08973 N34123 N49746